ROBUST LOW COMPLEXITY MULTI-ANTENNA
ADAPTIVE MINIMUM MEAN SQUARE ERROR EQUALIZER

Abstract of the Disclosure

Over a channel, a signal including a desired portion associated with a desired

5   channel and an undesired portion mixed with said desired portion may be received.

Based on prior knowledge and/or empirical estimation of the desired channel and an

empirical estimate of the signal cross-covariance, the desired portion from the received

signal may be recovered by adaptively equalizing the channel. In one embodiment, a

receiver, such as a mobile device (e.g., a cellular phone) includes a processor operably

10   coupled to a communication interface including at least two antennas to receive the

signal. The receiver may further include a MODEM that may be operably coupled to the

processor, that includes an adaptive equalizer capable of detecting the signal in the

presence of co-channel interference from several independent sources, inter-symbol

interference and fading, for recovering the desired portion in a cellular environment with

15   time division multiple access (TDMA) to enable digital transmission of the signal. Thus,

a blind adaptive space-time equalization on the signal based on minimum mean square

error (MMSE) may be provided.